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Walking the Sustainability Assessment Talk – Progressing the Practice of Environmental Impact Assessment (EIA)

Short Title: *Progressing Sustainability Assessment Through EIA*

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ABSTRACT

Internationally there is a growing demand for environmental impact assessment (EIA) to move away from its traditional focus towards delivering more sustainable outcomes. South Africa is an example of a country where the EIA system seems to have embraced the concept of sustainability. In this paper we test the existing objectives for EIA in South Africa against sustainability principles and then critique the effectiveness of EIA practice in delivering these objectives. The outcome of the research suggests that notwithstanding a strong and explicit sustainability mandate through policy and legislation, the effectiveness of EIA practice falls far short of what is mandated. This shows that further legislative reform is not required to improve effectiveness but rather a focus on changing the behaviour of individual professionals. We conclude by inviting further debate on what exactly practitioners can do to give effect to sustainability in EIA practice.

Keywords: sustainability assessment, sustainable development, environmental impact assessment, legislation, effectiveness

1. Introduction

The global imperative for sustainable development is well understood and has been firmly on the political agenda seemingly in most countries of the world since the Brundland Report (World Commission on Environment and Development, 1987) followed by the first Earth Summit, United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992; propelled the concept onto the global stage. Most countries appear to have incorporated sustainability related policies or legislation into their governance arrangements. Indeed Quental et al. (2011) noted peaks in political activity for sustainability coinciding with the 1992 Earth Summit and the ten year follow-up Earth Summit 2002 in Johannesburg. In the face of 'trends towards deeper unsustainability' (Gaudreau and Gibson, 2010) that have become all too apparent since then, it is desirable to develop and promote tools that can effectively deliver on sustainability expectations and needs 'on the ground'. One such existing tool with potential is environmental impact assessment (EIA) which is one of suite of 'environmental assessment' tools identified by Sheate (2009) as having sustainability¹ as the underlying purpose even if the tool did not explicitly start out in that context.

As far as we can ascertain EIA is employed in nearly all countries of the world (Morgan, 2012, for example suggests that 191 of the 193 member nations of the United Nations either have national legislation or have signed some form of international legal instrument that refers to the use of EIA). The worldwide spread of EIA was helped along no doubt by

¹ we use the terms sustainability and sustainable development interchangeably in this paper.

Principle 17 of the *Rio Declaration on Environment and Development* at the 1992 Earth Summit which provides that signatory nations must employ EIA 'for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority'. Most EIA operates at the level of individual development projects so this is the focus of our interest. While we note, and agree with, the argument of Baumgartner and Korhonen (2010) that strategic level action is desirable and necessary to achieve sustainability and that many approaches suffer from reductionism including many applications of impact assessment (e.g. Bond and Morrison-Saunders, 2011), project-based EIA may often be the only available sustainability-oriented tool in place (e.g. Hacking and Guthrie 2008 cite an example from Canada to demonstrate this same point) especially in a developing country context. Our primary interest in this paper is in exploring the extent to which EIA incorporates sustainability in its mandate as well as the effectiveness in delivering on the mandate. Where sustainability is explicitly entrenched in the mandate for EIA one could argue that in these cases traditional EIA has been extended to qualify as 'sustainability assessment' (i.e. processes that will truly deliver sustainability outcomes, e.g. see Pope et al., 2004).

One country that extensively embraced the concept of sustainable development and at the same time faces formidable sustainability challenges is South Africa. Principles for sustainability in various forms were incorporated into the Constitution of the 'new' South Africa that arose following the end of the apartheid era in the early 1990s as shall be demonstrated later as well as in many acts of parliament for specific governance functions such as the EIA legislation. With demographic characteristics simultaneously corresponding to both developed and developing nations (e.g. Department of Environmental Affairs and Tourism – DEAT, 2006), South Africa makes for a particularly interesting case study of sustainability governance and implementation. EIA is a key tool in the forefront of South African legislation aimed at achieving sustainable development for all its citizens, and like Hacking and Guthrie (2008) we frame EIA as a form of sustainability assessment.

The aim of this paper is twofold. Firstly, to test the existing EIA mandate in South Africa against sustainability principles developed by Gibson et al. (2005) and secondly to explore the effectiveness of EIA in delivering the mandate against the sustainability assessment effectiveness typology developed by Bond et al. (2012). The reason for the first research aim relates to the increasing demand internationally that EIA should move more towards sustainability assessment. We demonstrate that in some contexts EIA already has a very strong and explicit sustainability mandate which means that the challenge for EIA does not lie with the mandate (or the establishment of appropriate enabling legislation) but rather with giving effect to this mandate in practice. This then leads to the second research aim which is to explore the effectiveness of EIA in dealing with sustainability and giving effect to its mandate. The reasons why we chose the sustainability criteria of Gibson et al. (2005) and effectiveness typology of Bond et al. (2012) are explained in more detail later on.

The first step in realising the potential of EIA for sustainable development is to understand how principles and understandings of sustainability within impact assessment are reflected in EIA policy and legislation. In the next section we use the existing objectives and principles for EIA contained in the South African legal framework to demonstrate this. While much of our discussion is grounded in the impact assessment literature, the trans-disciplinary nature of sustainability thinking is revealed. We then briefly highlight the sustainability challenges faced in South Africa along with evaluations of the effectiveness of EIA practice and outcomes. We end by reflecting on the role of individual stakeholders in EIA practice in South Africa and their potential to act as change agents to influence and

redirect practice towards sustainability assessment and extend similar thinking to other assessment tools and their practitioners globally.

2. International Principles for Sustainability Assessment in South African EIA Legislation

It is not our intention to review and explain the principles of sustainable development in general when whole books such as the work of Dresner (2008) have been devoted to this topic; similarly it is the primary topic and focus of several international journals. Rather, for the purpose of this research we were interested in work where global sustainability assessment principles and criteria have been framed specifically in relation to impact assessment. In this regard we find the work of Gibson et al. (2005) to be particularly helpful. They take an integrated approach that specifically avoids break down into triple bottom line environmental, social and economic categories as their eight sustainability principles demonstrate (Table 1). Moreover, the principles have been widely applied in international research (e.g. Hacking and Guthrie, 2006; Weaver and Rotmans, 2006; Cravo and Partidário, 2011; Péti, 2012) and therefore seem to have wide appeal within the impact assessment community.

Table 1 Core principles for sustainability assessments (Source: Gibson et al., 2005:116-118, see also Gibson, 2006)

<p>Socio-ecological system integrity – Build human–ecological relations to establish and maintain the long-term integrity of socio-biophysical systems and protect the irreplaceable life support functions upon which human and ecological well-being depends.</p> <p>Livelihood sufficiency and opportunity – Ensure that everyone and every community has enough for a decent life and that everyone has opportunities to seek improvements in ways that do not compromise future generations' possibilities for sufficiency and opportunity.</p> <p>Intragenerational equity – Ensure that sufficiency and effective choices for all are pursued in ways that reduce dangerous gaps in sufficiency and opportunity (and health, security, social recognition, political influence, and so on) between the rich and the poor.</p> <p>Intergenerational equity – Favour present options and actions that are most likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably.</p> <p>Resource maintenance and efficiency – Provide a larger base for ensuring sustainable livelihoods for all, while reducing threats to the long-term integrity of socio-ecological systems by reducing extractive damage, avoiding waste and cutting overall material and energy use per unit of benefit.</p> <p>Socio-ecological civility and democratic governance – Build the capacity, motivation and habitual inclination of individuals, communities and other collective decision-making bodies to apply sustainability requirements through more open and better informed deliberations, greater attention to fostering reciprocal awareness and collective responsibility, and more integrated use of administrative, market, customary and personal decision-making practices.</p> <p>Precaution and adaptation – Respect uncertainty, avoid even poorly understood risks of serious or irreversible damage to the foundations for sustainability, plan to learn, design for surprise, and manage for adaptation.</p> <p>Immediate and long term integration – Apply all principles of sustainability at once, seeking mutually supportive benefits and multiple gains.</p>

The *Constitution of the Republic of South Africa* 1996 contains a variety of specific provisions in keeping with international sustainability principles. A founding provision in Section 1 outlining human values on which the Republic is founded includes 'Human dignity, the achievement of equality and the advancement of human rights and freedoms'. Chapter 2 is a Bill of Rights and it records an 'environmental right' in Section 24 which states that:

"Everyone has the right:

- (a) To an environment that is not harmful to their health or well being; and*
- (b) To have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that*
 - i) Prevent pollution and ecological degradation;*
 - ii) Promote conservation; and*
 - iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."*

This right explicitly includes the concepts of intra- and intergenerational equity as well as ecologically sustainable development. However, it is not an absolute right and needs to be balanced against other rights in the constitution such as rights dealing with Equality (s9), Housing (s26), Health care, food, water and social security (s27), and Cultural, religious and linguistic communities (s31) which clearly align with social sustainability expectations.

In South Africa, EIA is provided for under the *National Environmental Management Act* 1998 (hereafter NEMA) and this gives effect to the environmental right espoused in the Constitution along with some sustainability principles. It does this through Preamble text, definitions of 'environment' and 'sustainable development' (s1), national environmental management principles (s2) and general objectives for integrated environmental management (s23); Table 2 summaries key sustainability assessment related wording in NEMA. We acknowledge that South Africa has an extensive policy and legal framework dealing with sustainability beyond NEMA that also gives effect to the provisions in the Constitution discussed previously; for example sectoral legislation dealing with planning, water management, cultural heritage etc. also include sustainability as a principle and/or objective - however, in this paper we limit our discussion and evaluation to EIA.

Table 2 – The sustainability mandate contained in South African EIA relative to Gibson et al. (2005) principles for sustainability assessment

Sustainability Assessment Principles (Table 1)	Corresponding South African legal provisions in NEMA 1998
Socio-ecological system integrity	<p>Preamble Everyone has the right to an environment that is not harmful to his or her health or wellbeing. Inequality in the distribution of wealth and resources, and the resultant poverty, are among the important causes as well as the results of environmentally harmful practices.</p> <p>Section 2 Principles (2) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.</p>
Livelihood sufficiency and opportunity	<p>Preamble The State must respect, protect, promote and fulfill the social, economic and environmental rights of everyone and strive to meet the basic needs</p>

	of previously disadvantaged communities.
Intra- and inter-generational equity	<p>Preamble</p> <p>Everyone has the right to have the environment protected, for the benefit of present and future generations.</p>
Resource maintenance and efficiency	<p>Section 2 Principles</p> <p>(4) (a) Sustainable development requires the consideration of all relevant factors including the following: ...</p> <ul style="list-style-type: none"> (iv) that waste is avoided, or where it cannot be altogether avoided, minimized and reused or recycled where possible and otherwise disposed of in a responsible manner; (v) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource; (vi) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardized.
Socio-ecological civility and democratic governance	<p>Section 2 Principles [s2(4)]</p> <p>(f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.</p> <p>(g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.</p> <p>(h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.</p> <p>(i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.</p> <p>Section 23 General Objectives (for integrated environmental management)</p> <p>(2) The general objective of integrated environmental management is to -</p> <ul style="list-style-type: none"> (b) identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2;
Precaution and adaptation	<p>Section 2 Principles</p> <p>(4) (a) Sustainable development requires the consideration of all relevant factors including the following: ...</p> <ul style="list-style-type: none"> (vii) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions <p>24N. Environmental management programme</p> <p>(2) The environmental management programme must contain-</p> <ul style="list-style-type: none"> (g) a description of the manner in which it intends to- (i) modify, remedy, control or stop any action, activity or process which

	causes pollution or environmental degradation.
Immediate and long term integration	<p>Section 1 Definitions “sustainable development” means the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure that development serves present and future generations”</p> <p>Section 2 Principles (4) (b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.</p> <p>Section 23 General Objectives (for integrated environmental management) (2) The general objective of integrated environmental management is to - - (a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment.</p>

We also acknowledge that current South African legislation may generally contain greater emphasis on sustainability issues having been created afresh following dismantling of the apartheid era in which arguably highly unsustainable practices were embedded in legal instruments, particularly with respect to matters of social sustainability. However, we are aware that EIA legislation worldwide often contains some sustainability provisions; examples that we are familiar with include the *Canadian Environmental Assessment Act* 1992, England's *Environmental Assessment of Plans and Programmes Regulations* 2004 and the Western Australian *Environmental Protection Act* 1986. By demonstrating how EIA legislation in South Africa can be interpreted and potentially applied to deliver sustainability outcomes, we hope to inspire researchers and practitioners globally who may undertake a similar approach within jurisdictions relevant to them. For an interesting example of how Canadian EIA legislation has been applied with respect to sustainability see Gibson (2011).

To address the first research aim we conclude that although different terminology is employed, each of the eight sustainability principles in Table 1 as identified by Gibson et al. (2005) can be recognised within the EIA mandate contained in the relevant sections of NEMA reproduced in Table 2. Some points of difference arguably are that NEMA often treats environmental, social and economic categories separately where Gibson et al. (2005) firmly combine the social and ecological together, adaptation through learning and feedback from experience is not explicitly promoted within NEMA and the consideration of integration is perhaps less explicit than Gibson et al. with respect to timeframes now and into the longer-term future. However, ultimately, what this comparison shows is that EIA in South Africa has a strong and explicit sustainability mandate. Therefore the debate on how to integrate sustainability into EIA needs to focus on improving the effectiveness of practice and not so much on redrafting and refining the legislative mandate. This is an important point to make since, within the South African context redrafting and tinkering with legislation seems to have become the first and main focus in attempts to improve effectiveness. We suspect that the latter might also be the case in other countries.

Additional to the legislation in a move towards implementation of sustainable development, the South African government also developed a National Framework for Sustainable Development (NFSDF), which sets out a conceptual understanding as well as a vision and

key principles (DEAT, 2008a). The NFSD supports a systems approach to sustainability expressed as 'nested eggs' whereby economy is considered as a subset of socio-political systems which in turn are dependent upon the integrity of ecosystem services and the integration of these three dimensions of sustainability is achieved through governance. This approach moves away from the traditional concept of balancing the three pillars, biophysical environment, economic environment and social environment (e.g. something that Gibson, 2006 firmly rejects). It is within this context of sustainable development provided by the constitution, NEMA and the NFSD that the effectiveness and capability of EIA practice in South Africa needs to be considered. Before exploring this, we highlight some of the sustainable development challenges currently faced in South Africa.

3. Sustainable Development Challenges in South Africa and EIA Effectiveness

The mandate for sustainable development in South Africa is strong and it is clear from Table 2 and the previous discussion that EIA is meant to go a long way towards realising sustainability aspirations. The sustainability challenges in South Africa are formidable as O'Riordan (1998) and Rossouw and Wiseman (2004) make clear. Recent state-of-environment reporting highlighted (DEAT, 2006):

- deteriorating condition of the South African environment with respect to increasing pollution and declining air quality harming people's health, unsustainable exploitation of natural resources that threatens ecosystem functioning, land degradation and over-exploitation of fisheries; and
- unemployment and inequality levels being extremely high, poverty remaining deeply entrenched and on the increase in some areas, lack of access to basic needs such as clean water and safe sanitation, and millions of people affected by HIV and AIDS.

Importantly DEAT (2006) note that the environment and social aspects are entwined and mutually dependent. For example poverty reinforces people's dependence on natural resources and makes them more vulnerable to environmental threats. DEAT (2006) state that decisive action both individually and collectively as a nation is needed or otherwise South Africa runs the risk of losing the environmental services upon which all its citizens depend; an echo of similar concerns raised by O'Riordan (1998) previously. Swilling (2010) provides some recent examples of action at the municipal level in South Africa to tackle some of these sustainability issues.

We now devote our attention to the second research aim by exploring the effectiveness of the EIA system in delivering the sustainability mandate. For this purpose we used the sustainability assessment effectiveness framework and typology recently developed by Bond et al. (2012). Although over the years a myriad of approaches, frameworks and criteria have been developed to explore effectiveness in EIA (e.g. Sadler, 1996; Bartlett and Kurian, 1999; Baker and McLelland, 2003; Wood, 2003; Jones et al., 2005; Fischer and Gazzola, 2006; Jay et al., 2007) we chose the Bond et al. (2012) framework because unlike other approaches it was designed specifically in relation to sustainability assessment. The framework is derived from academic literature review and identifies that effective sustainability assessment involves procedural, substantive, transactive and normative elements. Moreover the framework acknowledges pluralism that exists in different contexts and also the important role of knowledge generation and learning. Table 3 presents a summary of the framework criteria and guiding questions related to each. For the sake of brevity the typology is not discussed in further detail here but for a more in-depth discussion see Bond et al. (2012).

Table 3 – Bond et al. 2012 Sustainability Assessment Effectiveness Criteria

Framework Criterion	Questions Asked
Procedural effectiveness	<i>Have appropriate processes been followed that reflect institutional and professional standards and procedures?</i>
Substantive effectiveness	<i>In what ways, and to what extent does sustainability assessment lead to changes in process, actions, or outcomes?</i>
Transactive effectiveness	<i>To what extent, and by whom is the outcome of conducting sustainability assessment considered to be worth the time and cost involved?</i>
Normative effectiveness	<i>In what ways, and to what extent does the sustainability assessment satisfy the listed normative imperatives?</i>
Pluralism	<i>How, and to what extent are affected and concerned parties accommodated into and satisfied by the sustainability assessment process?</i>
Knowledge and learning	<i>How, and to what extent does the sustainability assessment process facilitate instrumental and conceptual learning?</i>

South Africa has a mature and well established EIA system that compares favourably with examples of good practice elsewhere in the world (e.g. Lee and George, 2000; Wood, 2003). EIA was originally legislated in South Africa in 1997 and since then has gone through two extensive legal revisions in 2006 and 2010. Practice is extensive with over 4,000 EIAs conducted per year and more than 50 strategic environmental assessments (SEA) completed to date (Retief *et al.*, 2007; Retief *et al.*, 2011). Furthermore, the EIA community of practitioners is particularly active as reflected by the over 1,000 members registered with the local South African chapter of the International Association for Impact Assessment (IAIA).

There has been considerable interest in recent years on measuring the effectiveness of the EIA system in South Africa both through governmental reviews as well as independent research (e.g. DEAT, 2008b; 2008c; Retief, 2007) and a major review of processes by the Department of Environmental Affairs (DEA) is underway at time of writing (e.g. DEA, 2011a). Sustainable development is a major theme of DEAT (2008c) and is also being addressed within the current review. We integrate some of the key findings of these reviews in our evaluation of the EIA system with respect to sustainability assessment that follows. Our evaluation is presented in relation to the key criteria proposed by Bond et al. (2012). However, references to knowledge and learning are not discussed separately but rather integrated with the other criterion namely procedural, substantive, transactive and normative effectiveness as well as pluralism.

3.1 Procedural Effectiveness

Clear procedural requirements for EIA are legally prescribed in NEMA. They are too extensive to summarise here, but in overview there are specific provisions for classic steps in an EIA process corresponding to screening, scoping of significant issues to address, preparation of environmental impact statements, public consultation and review processes, decision-making and enforcement. Some of the main criticisms of the EIA system have been couched in terms of 'ticking the box' with respect to procedural compliance; in other words a superficial check that each step in the process has been addressed rather than in-depth quality control or analysis (e.g. Macleod, 2006; DEA, 2011b:32). It has been argued that the legislative framework has led to the legalistic and mechanistic straight jacketing of assessment processes, transforming it into a lifeless and bureaucratic exercise, a move

away from the need for flexibility and issues driven approaches typical during the early years of EIA (Sowman *et al.*, 1996; Kidd and Retief, 2009).

Arising from a questionnaire survey of South African EIA practitioners, DEAT (2008c) reported that "Very few participants in the questionnaire indicated that the purpose of EIA is to ensure or promote sustainable development" and suggested that this was "indicative of the general ignorance amongst both officials and practitioners in respect to the sustainable development purpose of EIA". Similarly DEA (2011a) reported on a misalignment with the objective of promoting ecologically sustainable development in the South African EIA system whereby practice is seen to be attempting to reduce the harm caused by specific projects rather than promoting the overall objective of attaining sustainable development. More specifically DEA (2011a, p5) stated that:

This means that in making decisions in relation to a specific project there is often insufficient attention given to the context in which the decision is being made and to whether or not the implementation of the project would have a positive impact on the attainment of ecologically sustainable development and can be considered to be "justifiable" socio-economic development.

EIA reports are criticised in this same review for not always providing sufficient information regarding the extent to which individual projects are compatible or incompatible with strategic plans and policies and without adequate attention being given to the wider context; for example DEA (2011a:44) state that: "decision-makers do not decide whether or not to grant an environmental authorisation on the basis of whether or not the project will contribute to ecologically sustainable development".

In a broader context, in recent years in South Africa considerable work has gone into developing 'sustainability science' and applying new ways of thinking about EIA in order to better deal with sustainability issues (e.g. Burns *et al.*, 2006; Burns and Weaver, 2008; Audouin and Hattingh, 2008). Having identified different types of knowledge necessary in EIA and sustainability thinking, Audouin and De Wet (2010) argued that a key constraint towards introducing sustainability thinking into EIA surrounds difficulties in engaging with 'value-based' and 'experiential' knowledge. Because assessment deals with very complex systems thinking, traditional 'scientific' knowledge alone does not suffice. These authors conclude that the theory behind knowledge and learning related to sustainability and EIA seems to suggest the need for major mind shifts (Audouin and Hattingh, 2008; Audouin and De Wet, 2010). As indicated previously, there are shortfalls evident in EIA practice in South Africa regarding how to practically implement these ideas within a legalistic, procedurally driven EIA system.

Therefore, in answering the question of whether environmental assessment achieves procedural effectiveness the answer would be that recent emphasis in South Africa is not concerned with compliance to specific procedural steps, but rather how to achieve flexibility in procedural design towards achieving context specific sustainability objectives. It is also worth highlighting that the need for integrative thinking and flexibility in process design are also inherently included in the systems approach to sustainability described in the NFSD (DEAT, 2008c).

3.2 Substantive effectiveness

There is no doubt that the EIA community in South Africa is keenly interested in questions surrounding the effectiveness of the process. Notwithstanding that effectiveness was a key focus of the DEAT (2008c) review of EIA in South Africa, an analysis of the 135 papers presented at IAIA's annual conferences between 1997 and 2008 found that more than half dealt with issues of effectiveness (Retief, 2010). Despite this interest no studies to date have attempted to document the effectiveness of EIA practice in terms of substantive

outcomes. However, published empirical research in relation to SEA in South Africa identified inability to deal with the concept of sustainability, particularly in defining and measuring it, as a main area of weakness that translated into an inability to influence the content of plans and programmes as well as decision-making on SEA in general (Retief, 2007). As with the previous discussion, it is clear that the focus of impact assessment with respect to sustainability understanding and conceptualisation has direct implications for performance. It is important to note that Retief (2007) and Retief et al. (2008) did identify a number of indirect beneficial outcomes in their case studies analysed such as capacity building, raised awareness of sustainability issues and significant contributions to information generation and sharing.

Considering effectiveness and substantive outcomes of EIA in a more holistic sense with respect to indirect outcomes, wide ranging positive and negative effects across different scale and spheres of government (local, provincial/regional and national) as well as different areas or sectors of influence (e.g. the economy, politics, policy and legislation) are evident. For example, Scott and Oelofse (2005) and Patel (2009) show how the thinking around the substantive purpose of assessment has shifted from merely informing decision making and mitigating negative impacts to also aim to change decision making cultures themselves. With respect to the policy and legal mandate for EIA, this has already happened in theory as our earlier discussion (Table 2) demonstrated, but it is evident that practitioners still struggle to give effect to or operationalize sustainability thinking towards more sustainable outcomes (e.g. DEAT, 2008c; DEA, 2011a). It is only when sustainability becomes entrenched into normal EIA thinking and processes, especially in a culture dominated by relatively inflexible procedural approaches discussed previously that substantial sustainable development gains might be expected to arise from EIA practice.

3.3 Normative effectiveness

The comprehensiveness of impact assessment processes with regards how the scope of sustainability principles are addressed was a key tenet in the model advanced by Hacking and Guthrie (2008). As previous discussion indicates, simply defining and including sustainable development as an objective of EIA does not ensure success, and furthermore the weight given to particular sustainability principles and imperatives may skew outcomes. One of the key characteristics in the South African definition of sustainability is that it is unashamedly anthropocentric, notwithstanding the ecologically sustainable development emphasis of the NFSD (see DEAT, 2008a), because of the social sustainability imperatives currently faced as discussed previously. There is also no clear explanation of how issues should be weighted and/or how trade-offs should be considered in decision making (Kidd, 2008). While there is a legal requirement for EIA decision making in South Africa to 'take into account the interests of all interested and affected parties', for the 'social, economic and environmental impacts of activities, including disadvantages and benefits' to be considered and for decisions to 'be taken in an open and transparent manner' (NEMA, s2(4)(g-k)); these provisions fall far short of the sustainability decision-making trade-off rules espoused by Gibson et al. (2005) in which explicit justification by the *proponent* of an activity is advocated so as to ensure a fully transparent and publicly accountable approach to trade-offs occurs.

In a recent landmark South African constitutional court case the judge described the concept of sustainable development as a 'mediating principle' in EIA which needs to reconcile and accommodate the three pillars of sustainability, namely economic development, social development and environmental protection (Retief and Kotze, 2008). This reference to sustainable development in terms of the three pillars is not in keeping with the 'systems approach' advocated in the NFSD. From a deep ecology perspective Pete (2008) described this somewhat vague and clumsy description of sustainable

development as ‘shuffling deckchairs on the Titanic’ because it does not recognise the intrinsic value of the environment nor does it deal with the fundamental flaws in the economic system which have been blamed for environmental destruction and extreme inequality. However, notwithstanding these challenges EIA is already strongly positioned through its decision making mandate to ask the right questions regarding more sustainable outcomes as the comprehensive range of sustainability assessment issues provided for in NEMA demonstrate (Table 2). Recently there have been moves to distil (directly and explicitly) context specific so-called sustainability criteria for decision making from the legal mandate in NEMA by certain provincial environmental authorities (DEADP, 2010), and indications are that others are following (e.g. this was a specific topic of discussion at the IAIAAsa 2011 annual conference). Thus the prospect for comprehensive, and we hope substantively effective, sustainability assessment approaches in EIA in South Africa is promising, even though practice currently lags behind what is theoretically possible to achieve.

3.4 Transactive effectiveness

Questions on the cost implications of regulatory compliance in general and EIA in particular, have been at the forefront of high-level political debate for some time. It has been estimated that regulatory compliance costs South African business a massive R796 billion per annum (6.5% of total GDP for 2003), which is considered a substantial burden hindering national development targets (SBP, 2005; Crookes and De Wit, 2002). In view of this increased concern over the cost of red tape to the economy, government has stated with reference to EIA that,

“Government is concerned about any delay, costs and associated impacts on economic growth and development. This is why we need to improve efficiency and effectiveness without compromising basic environmental rights and quality.” (Van Schalkwyk, 2006: 1)

The same message has been echoed across government, sometimes in less subtle ways. For example the minister of housing stated that:

“We cannot forever be held hostage by butterfly eggs that have been laid, because environmentalists would care about those things that are important for the preservation of the environment, while we sit around and wait for them to conclude the environmental studies.” (Minister of Housing, Lindiwe Sisulu, - as quoted by Macleod, 2006:12)

However, research on the efficiency of assessment processes shows that on average they are conducted in line with prescribed legal timeframes as well as international standards (DEAT, 2008c) and that the average cost of EIA within South Africa is particularly low compared to international EIA systems (Retief and Chabalala, 2009). Overall the message within the South African context is that good practice EA does add value and saves time and money. This is because assessment asks, at an early stage in decision making, fundamental questions about the proposed action. These questions traditionally include issues around resource availability, efficiency in resource use, best practicable technologies, viable alternatives, etc. However, within the context of sustainability assessment questions around so-called indirect costs are also included. These indirect costs relate to loss of ecosystem services, impacts on quality of life, etc. It is recognised that although these costs are more difficult to calculate and cover longer time frames, they are very important considerations when dealing with sustainability in EIA.

3.5 Pluralism

Part of the sustainability mandate with respect to people concerns not just the outcomes of EIA on the affected community, but also how stakeholders are engaged in the assessment and decision-making processes themselves. South African society is represented by a diversity of cultures, races, socio-economic groupings and languages; for example the Constitution (s6) identifies 11 official languages for the nation. With respect to its legislation and governing arrangements, South Africa seemingly has some of the most liberal and extensive provisions for public participation, access to information and *locus standi* in the world. The opportunity to, in principle, 'have your voice heard' has been central to the post-apartheid era democracy. Although in practice South Africa could not be described as a mature democracy, Glazewski (2005) and Kidd (2008) provide some good examples where public participation and the right to access to information have, through the EIA process, influenced decisions on major developments related to mining and infrastructure.

The diversity of stakeholders in South Africa's EIA practice, including not just language groups but also relative levels of education and mobility, poses a considerable challenge for practitioners in terms of achieving effective, equitable and representative engagement in EIA processes (e.g. see Scott and Oelofse, 2005). While opinions within South African society will vary as to the effectiveness of the EIA process to appropriately consider the views of those affected or involved, anecdotal evidence suggests that affected stakeholders tend to be satisfied with the level of involvement. This is not to say that there is not room for improvement and the ongoing review of EIA practice in South Africa has set out to ensure that marginalised communities are appropriately empowered by the process (DEA, 2011c).

4. Conclusions and Recommendations

Our brief report card on the EIA framework in South Africa demonstrates that the policy and legal content is sound but application is generally lacking. The message that clearly emerges is that simply defining sustainability in legislation and including it as an objective of EIA does not ensure success in practice, thereby pointing to an implementation gap between the policy framework and application in practice. While we are heartened by the potential of existing EIA frameworks in South Africa to allow for sustainable development goals to be comprehensively pursued, this does not appear to be happening in actual practice. If the legislative framework is soundly based, the focus then must shift towards determining how practice can be improved.

The current review of EIA practice in South Africa advocates a three level approach to better aligning practice under NEMA with sustainability expectations (DEA, 2011a) based on:

1. *Tweaking the existing system to reap "low hanging fruits"* – i.e. What existing measures or mechanisms can be tweaked or improved with minimal intervention?
2. *Minor interventions to achieve greater efficiency and effectiveness gains* – i.e. What can be done through making some minor legal amendments or new interventions? and
3. *Complete overhaul* - i.e. What needs to be completely overhauled?

What we have argued in this paper is that there is no apparent need for legislative change in South African EIA arrangements and certainly not a complete overhaul of provisions. We believe that change to sustainability assessment practice can be achieved without even needing to 'tweak the system' (notwithstanding that we are supportive of the measures being proposed by DEA 2011a in this respect which are largely about different ways of better formatting reports for EIA).

The move away from what we consider to be an over emphasis on legal reform towards a more pragmatic approach suggests that practitioners have a key role to play. In South African EIA, NEMA establishes a particular and key role for the 'Environmental Assessment Practitioner' (EAP), who is defined in Section 1 of the Act as:

the individual responsible for the planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management plans or any other appropriate environmental instruments introduced through regulations.

In other words it is the professional consultant appointed by the proponent of a development activity along with the environmental regulator who is legally charged with responsibly carrying out most EIA activities rather than the proponent themselves. This provides a unique opportunity for potential change or influence on EIA practice in South Africa. A registration authority is going to be established in the near future. This provides an opportunity to educate the staff within this 'new' agency with regards to the sustainability expectations and provisions of NEMA. Secondly, unlike many proponents who may only ever once engage in EIA processes, EAPs can be expected to have regular or ongoing engagement in EIA, thereby maximising opportunities for internal or personal learning from experience (e.g. Sanchez and Morrison-Saunders 2011 make a similar case with respect to the EIA regulator in Western Australia). Finally the IAIAAsa community holds a vibrant annual conference at which new ideas for EIA practice are shared and debated amongst EAPs. We should also note that other EIA stakeholders such as non-government organisations and academics are also an important contributor at these events and within IAIAAsa more generally. Our point is that there is considerable opportunity therefore for progressive individuals within the EIA community of South Africa, especially the EAPs, to influence and change the direction of future practice.

What we are advocating for EIA professionals in South Africa corresponds to the "personal development oriented to service and transformational leadership" extolled by Hay (2010:163), at the same time we take heed that "identity is a matter of a negotiation where different social roles are learned in relations with others" (Strannegård and Dobers, 2010:119). In other words, if some individual practitioners start to change their 'normal' EIA practice by genuinely taking on the sustainability assessment agenda and challenges, they will have a good chance at influencing their peers in the industry through events such as the IAIAAsa annual conference. Through personal behaviours within the EIA community of South Africa a transformation may re-orient the behaviour of the overall community of practitioners. Indeed, arguably this community is already aware of the potential that lies here; it is reflected in the title of the 2011 annual conference of IAIAAsa: "Step up and step out". The Keynote Speaker at this conference championed the expression "Do your day job [and do it well]" (Gear, 2011) implying that EIA professionals already have the potential to deliver sustainable development in their normal activities. Similar sentiments have been expressed by Weaver et al. (2008) for both South African and international EIA practitioners alike in which case they advocated individuals' "pushing the sustainability vectors on every EIA an individual practitioner works on" and by Gibson et al. (2005:188) who concluded their book with the statement: "It is about making the world better, one undertaking at a time".

To conclude, the theoretical ability to tackle sustainable development may well already exist in current provisions for EIA, as the legislation from South Africa we have outlined here clearly shows. Existing EIA practice in South Africa can be extended through practice and implementation into an assessment tool that can deliver sustainable development without need for legislative change. International expectations and principles for sustainable development are adequately captured in the South African legislation for EIA. However, historically entrenched EIA practice does not adequately pursue sustainable

development. What is needed most is change to practice, not further amendment of legislation, and this falls back on the role of individuals. While project level decision-making and implementation does pose some constraints on what can be fully realised in the name of sustainable development, there is nothing stopping practitioners (especially EAPs) from 'stepping up and stepping out' for sustainability. We suggest that the experience and opportunity prevalent within a South African context to improve EIA practice is not unique and may have applicability and relevance to EIA and sustainability assessment practitioners worldwide, and similar thinking could also potentially be extended to other sustainability related tools. We trust that the outcome of this research and our invitation to practitioners to 'walk the sustainability talk' will generate further debate and research on what exactly practitioners can contribute towards more effective EIA.

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